service for themselves. The heads of plaice (*Platessa vulgaris*) several times offered them were refused, and being forced down their throats were instantly ejected. Castings of the indigestible portions of their food are regularly thrown up. Although the female is very partial to washing, the male has never been known to wash himself. Their usual cry is a long-drawn scream, but frequently they keep a low purring noise like a cat, and the male bird, when chased to his annoyance, utters a sound like coo-coo-coo (described by Dr. Neill as "cuckoo.").

The third individual, a female, is very different from the others, in being somewhat playful and quite familiar even with strangers. Live rats turned out to her have been invariably captured within a very short time. In the few instances where I have seen dead prey seized, the four claws were used*. Standing about a pace distant from this bird on one occasion when she was at liberty, and during bright sunshine, it was interesting to observe the contraction of the pupil of the eye, which was particularly conspicuous from contrast with the immense golden irides. When attracted by larks which were singing at a great elevation and distance, the pupil, from the ordinary size, adapted to near objects, instantly diminished to its minimum or half the ordinary diameter; and again when the sight was directed to birds at less distance, its diminution varied accordingly. The other two owls are not in the least affected by bright sunshine; and from their observing birds passing at a great height in the air, or as expressed to me "almost in the clouds," they are considered to see as far as a golden eagle, their companion in captivity.

XXVI.—*The Natural History of the British Entomostraca*, No. V. By William Baird, Surgeon, H.C.S., &c.

[With a Plate.]

(Continued from Mag. Zool. and Bot. vol. ii. p. 412.)

Daphnia.

Anatomy.—The body of the insect is composed of two parts very distinct from each other; the one much smaller than the

* See observation to the contrary in the last-cited work, p. 310.

other, forming the head; the other, much larger, being the body properly so called, or abdomen. This soft body is contained within a very slender and delicate shell, the part covering the head being much harder than the other parts and prolonged underneath into a considerable sized beak. The valves, which inclose between them the abdomen, are in most of the species perfectly smooth round their circumference, but on the middle are marked with deep crossed lines, forming a mesh work, or as Schæffer describes it, are shagreened like the skin of the shark. They are open on the anterior margin, and along the posterior extremity as far as the tail, but have no hinge, being, as Goeze says, simply soldered together, though Schæffer asserts that the animal can open and shut them at pleasure. In some species these valves are prolonged posteriorly to a point forming the tail, which at some periods of their growth, and in some varieties, is very long, in others very short, and in some altogether wanting. In the head we distinguish the following parts: beak, antennæ, eye, rami, brain, mouth, and part of the digestive canal. In the body we distinguish part of the digestive canal, the body of the animal itself, heart, legs, and organs of generation. The beak is a prolongation of the hard covering of the head, and is asserted by Swammerdam to be the mouth of the animal, by means of which, being pointed, it sucks up its food. Both DeGeer and Schæffer however pointed out the erroneous nature of this assertion, and later writers, such as Jurine and Straus, have still more clearly shown it to be wrong. At the extremity of this beak, and a little underneath it, we see two small projecting organs, which are the antennæ. Schæffer, who is perhaps the first person that has noticed these, considered them as palpi, by means of which the insect distinguished food proper for itself. Jurine calls them "barbillons," but Straus considers them as being the true antennæ of the insect, though he says they do not seem to possess any voluntary motion. In the female they are extremely small, and from being much larger in the male, Muller, who does not seem to have observed them in the female at all, considered them as the male organs of generation. Jurine describes them very particularly in the male; he calls them "harpons" (Plate ix. fig. 11), says they occupy the place of the "barbillons" of the female, and are each composed of four rings; the first of which is very long, a little arched, and has at its extremity a "talon" from which issue two stiff hairs. The second and third are very small, whilst the fourth is a long horny hook. They seem to assist the first pair of feet in the act of copulation. The eye (plate ix. fig. 12.) is a spherical body contained in an infundibuliform tube, allowing of a semi-rotatory motion upon its centre, and is furnished with twenty crystallines according to Straus, which are limpid, and when isolated are each pear-shaped. Swammerdam asserted that there were two eyes, which seemed to be joined together, and several authors have adopted the same opinion. Schæffer however says there is only one, and Muller and DeGeer repeat this, an opinion which has also been adopted and proved correct by Straus and Jurine. Eichhorn, as quoted by Straus, asserts that the eye is the stomach of the insect! On each side upon the base of the head are inserted the rami or arms. They consist each of a single joint at the base, dividing into two branches. This first joint is slightly conical, of the length of the head, and very moveable at the base, by means of a joint which unites it to the body and facilitates its motions in every direction. The posterior branch of each is divided into four articulations, the first being very short: the other is divided into three. Both branches are furnished with several long filaments or setæ, the posterior branch having none on the two first joints, one at the extremity of the third, and three at the extremity of the fourth. The anterior branch has one at the extremity of each of the first two joints, and three at the extremity of the third. These filaments in some of the species, such as the *Pulex,* &c. are beautifully feathered or plumose, and are each of them composed of three moveable joints, which, as DeGeer says, augment their flexibility. Swammerdam calls these organs the arms, and describes their motion very particularly, which he says is three-fold: *rectilineal,* up and down, and to each side; *unequal,* keeping the insect now at the bottom and then again at the top of the water, which sort of motion he compares to the flight of a sparrow; and *gyratory,* by which the insect moves itself in a circular manner. DeGeer also calls them arms, but Muller, and most other naturalists after him, call them antennæ. Jurine, however, calls them "bras ramifiés," and Straus, considering them very justly as the chief or almost only organs of locomotion, and acting as it were as fins, calls them *rami*, or *rames branchues*: they are in fact, he says, a first pair of feet, and act as such; as it is by means of these organs alone that the insect moves, the other feet not serving at all for that purpose.

The brain, or first ganglion of the nervous system, is situated near the eye, and is composed of two lobes, from the superior anterior commissure of which we see, going off to the eye, the optic nerve. The mouth is of a rather complicated structure, is situated near the junction of the head and body, near the base of the beak, and consists, according to Straus, who has given the most correct account of this organ, of a "labre" or lip, two mandibles, and one pair of jaws. The "labre" or lip (plate ix. fig. 3.) consists of a flattish body, strongly compressed at the sides, and has at its extremity a large lobule (*a*). It is fixed to the posterior part of the base of the beak, is very moveable upon its antero-superior angle, and admits of a considerable separation. The mandibles (plate ix. fig. 2.) are very strong, and consist each of a pretty broad plate, which at its superior extremity is in form of a narrow point (*a*), and articulates there with the body. It descends from thence vertically to the mouth, its inferior extremity being curved sharply inwards, so as to penetrate into the mouth between the labre and corresponding jaw, and terminating in a sharp, simple, cutting edge (*b*), which has neither teeth nor triturating surface, and is quite free and unattached. These mandibles are not provided with either palpi or branchiæ, but are quite naked, and are moved by two muscles; an abductor which moves them upon themselves from within outwards, and an adductor (*c*) which brings them back to their first position, and at the same time bringing them nearer each to the other. The jaws (plate ix. fig. 1.) consist each of a strong body (*a*), somewhat in the form of a disc, or rounded on the posterior surface and a little flattened on the sides, which terminates in four strong, horny spines (*c c*), three of which are prolonged into hooks, which are strongly curved forwards and inwards, and a prolongation or neck which is somewhat hollowed out into a gutter (*b*), and articulates by means of it with the "labre" or lip. These parts seem to be almost constantly in motion, as if the animal were perpetually employed in eating. Jurine describes these organs somewhat differently from Straus, and his figures also vary a good deal from those of this latter author. The "labre" or lip he calls "sou-pape;" and the jaws, though Straus denies his having seen them at all, are, I suspect, what he calls "barbillons," which he says consist of four rings, terminating in four filaments. Their use is, he says, to push into the "sou-pape" the bodies which ought to enter as aliment. The mouth, as I have already stated, was placed by Swammerdam at the extremity of the beak, an opinion adopted also by Ledermüller. Schæffer, however, pointed out this error, and showed its real situation, and DeGeer also pointed out its true place. Schæffer describes the two mandibles, and fancied he also saw two lips, but could not make them out distinctly, from the smallness of the shell. Part of the digestive canal is also situated in the head, and part in the body. It commences immediately behind the mouth in the form of an œsophagus, which is short, narrow, slightly curved, and stretches obliquely forwards and upwards, and terminates immediately behind the brain, in the stomach.

The stomach is in form of a large vessel, diminishing slightly in diameter from before, behind, and is curved somewhat in the shape of an Ɛ, or a figure 3 reversed, as described by Schæffer. It runs almost all the length of the insect, opening by the anus between the two first dentated arches of the posterior part of the last segment of the body. Immediately behind the eye, near the cardiac extremity of the stomach, we see two vessels, curved upwards, the arch turned towards the eye: these are described by Schæffer, who considers them as organs for furnishing the necessary juices for the nourishment of the body. DeGeer says they resemble cæca. Jurine supposes them to be organs proper for furnishing a juice destined to perfect digestion. Straus at first considered them as such also, but upon more mature examination at length concluded them to be really cæca. The body of the animal, or abdomen, is quite free and unattached within the valves of the shell. It is slender and long, and is divided, according to Straus, into eight segments, the first of which is the largest, and is the only one which is attached to the valves. At the second segment the abdomen suddenly diminishes in vertical diameter, sinking down and leaving above a strong projection, formed by the first segment. From this projection, throughout the rest of its extent, the body is unattached to the shell, and leaves a vacant space between it and the edge of the valves, into which the insect deposits the eggs after laying them, and where they remain till hatched and ready to be launched into the world. The seventh segment is provided with two filaments, which have an articulation about the middle of their length, like those of the rami. In the last segment we perceive two dentated arches, between which is situate the anus. Beyond this it contracts in size, and terminates in two horny hooks, the last of which is the longest. The whole of the body, except the first segment, as I have already said, is free and unattached, and the insect can extend it beyond the valves at pleasure, the two hooks at its extremity serving well for enabling it to clear the interior of the valves. It seems also to clear the feet from any particles of mud or dust adhering to them, and Schæffer thinks it may also assist in bringing before the mouth objects of food. He says, also, that perhaps the motions of the insect are partly regulated by the strokes of this body or tail, as he calls it, and certainly it is in almost constant motion when the insect swims. On the back of the insect, in the first segment of the body, we see an ovoid-shaped vesicle, possessed of very rapid contractions; this is the heart (plate ix. fig. 4.) According to Jurine, there springs from its anterior extremity an arterial vessel (*a*), which contracts in an opposite manner to the heart itself, curves immediately from its origin, and goes backwards, following the direction of the intestinal canal. Gruithuisen describes the heart and circulation at greater length. He makes two hearts, one venous, the other arterial: the venous supplies the intestines and other parts of the body with blood; the arterial supplies the head and parts connected with it, its branches making the circuit of the shell on the anterior edge, and collecting near the posterior inferior part into one large trunk, which runs along the back of the shell, and returns to the arterial heart again. The legs are five pairs, all differing in many respects from each other, and serving a different purpose than as organs of locomotion. The first pair (plate ix. fig. 5.) are the smallest and most simple of construction, and are situated immediately behind the mouth, being inserted into the body of the insect by the first joint (*a*), which is long and nearly cylindrical. It has four joints; the second being in form of a large vesicle (*b*); the third joint is fixed to the inferior part of the vesicle (*c*), is nearly triangular, compressed, and furnished at the inferior edge with ten long needles (*d*), situated all on the same plane, like the teeth of a comb. Attached to one corner of this third joint is an appendix (*e*), small, and terminated by a small spine, accompanied with a needle similar to those of the preceding joint; this is called a fourth joint by Straus. The second pair (fig. 6.) are larger than the first, and are articulated to the body a little behind them; the second joint (*b*) or vesicle is more heart-shaped than in the first pair, and the third joint (*c*) is much flatter. It is a slender plate, quadrilateral, attached by its upper edge to the preceding joint, and carrying inferiorly five strong plumose needles (*d*). The appendix to the third joint (*e*) is larger than the corresponding one in the first pair, and is terminated by two long spines. On the anterior edge of the third joint we see attached to it a slender, semicircular-shaped branchial plate (*f*), which has on its free unattached edge a row of twenty needles, arranged like the teeth of a comb, the last of which is the longest. In the third pair (fig. 7.), the first and second joints (*a* & *b*) are much the same, but larger than those of the preceding pair. The branchial plate (*c*) is attached to the external face of the second joint; is larger and longer than in the preceding pair, having seventy-six filaments on its free edge; and has at its posterior extremity a small ovular appendix of the same nature as the branchia, and terminated by four branchial filaments. The third joint (*d*) is attached to the internal edge of the second; it is a large, almost square plate, and sends forth from its posterior border four flat, plumose digitations or spines. The fourth pair (fig. 8.) is very similar to, but rather smaller than, the third, and has only sixty-five branchial filaments. The fifth pair (fig. 9.) differ in many respects from the four preceding ones: the first joint is much the same as in the other feet, but the second, or vesicle (*a*), is kidney-shaped instead of heart-shaped. From this joint, and inferior edge of the first, arises an elongated plate (*b*), which has no filets. Behind this plate arises also from the second joint another (*c*), very short and broad, arched upwards, and terminating above in a flat, plumose, or rather ciliated prolongation. Inferiorly it terminates by a small moveable joint (*d*) having a long needle directed downwards, without cilia. Jurine says this last pair of feet are not inserted into the body of the insect, but the one is confounded with the other on the opposite side; the junction of the two forming the commencement of a gutter or canal, which is prolonged along the immediate attachment of the anterior feet to the mouth, where it terminates. These five pairs of feet are in almost constant motion, even when the animal is still and at rest, and their use at such times is to communicate an undulatory motion to the water, from one pair to another; thus establishing a current which enters the shell by the anterior part, carrying the molecules, &c. in the water to the posterior part, where the gutter commences, and there being driven by the vermicular motion back again to the anterior extremity of the canal or mouth. None of these feet are used for locomotion. The first and second pairs according to Straus are used by the insect for prehension. According to Jurine, the chief action of the first pair is to direct the alimentary particles brought up by the current of water along the canal above-described, into the mouth. When the mouth is opened, says the same author, to receive the food, the motion of all the feet except this first pair ceases, but in them, on the contrary, is then accelerated. The grand use of the third and fourth pairs is for respiration, being adapted for that purpose by their branchial plates, which, as DeGeer had already observed, serve the same purpose to these insects as the gills of crabs, certain aquatic insects and larvæ, fishes, &c. The second joints of these feet, which I have above described as heart-shaped vesicles, were considered by Schæffer as pockets filled with a liquid destined for the reproduction of the shell at each moulting. This opinion, however, has never been verified by any succeeding observer. Till Jurine and Straus described these insects, the number of the pairs of feet even seemed to be undetermined. Joblot says he believes there are three pairs. Schæffer says there are one or two pairs more. Muller describes five pairs in *Daphnia Pulex* (*pennata*), but four only in *longispina*. All the species however have five pairs. In the male, the first pair of feet (plate ix. fig. 10.) differ considerably from the corresponding pair in the female. The appendix to the third joint (*a*) (the fourth joint of Straus,) is terminated by a strong claw, curved strongly outwards; and the last bristle of the third joint is much elongated, nearly the length of the body, and floats outside the shell. Jurine describes this pair of feet very particularly, and shows the use of them to be the same as the hinge-joint antennæ in the male *Cyclops*; viz. for seizing and retaining hold of the female during the act of copulation, the male introducing them along with the "harpons" or *antennæ*, into the interior of the shell of the female, and grasping her feet.

Organs of Generation.—The male organs have never been discovered, Muller having mistaken the antennæ for them; neither have the female organs been observed, with the exception of the ovaries. That they reside in the lower portion of the body appears most probable, from the description I have already given of the method of copulation as observed by Jurine. Straus thinks they have no external organs at all, but that the male simply injects the semen under the valves of the female, from which it introduces itself into the ovaries. The ovaries are placed along the sides of the abdomen, as in *Cyclops*, and show their situation by the matter of the eggs in the shape of small round pellucid globules. These make their appearance in the young insect after the third moulting; and gradually after that increase in size, lose their transparency, become continuous, and form a dark mass on the outer edge of the intestine, partly globular and partly elongated. At the sixth segment of the body the ovary communicates with the open space on the back of the insect, already described, and immediately after the fourth moulting we see the eggs already laid and deposited in this space, where they remain till fully hatched.

Species.

I. *Daphnia Pulex.* Valvulis longe caudatis; capite magno; ramis plumosis; segmente corporis sexto quatuor lobulis instructo.

Hab. Ponds and ditches. Common.

Synonyms. Pulex arborescens, *Swammerdam, Hist. Insect. Generalis, p.* 76. *tab.* 1. *fig.* a, b, c, 1669.—Vermes minimi rubri, *Merrett, Pinax Rer. Nat. Britan. p.* 207, 1677.—Animaletti aquatici, *Redi, Osservazioni, tab.* 16. *fig.* 5, 1684. *Redi, Opere, vol.* ii. *tav.* 16. *fig.* 5, 1687.—Pulex arborescens, *Swammerdam, Biblia Naturæ, p.* 86. *tab.* 31. *fig.* 1. 3, 1737. *Bradley, Philosoph. Account of Works of Nat. p.* 202. *pl.* 25. *fig.* 5, 1739.—Monoculus Pulex arborescens, *Linnæus, Syst. Nat. edit.* 4. *p.* 96, 1744.—Puceron branchu, *Trembley, Mem. pour servir à l'Histoire d'un genre de Polypes d'eau douce, p.* 92. *pl.* 6. *fig.* 3. *p. and fig.* 11, 1744.—Monoculus pulex arborescens, *Linnæus, Fauna Suecica, p.* 344, 1746.—Water Flea with branched horns, *Baker, Emp. for Micros. p.* 302. *pl.* 12. *fig.* 14, 1753.—Pou aquatique*, *Joblot, Observ. d'Hist. Nat. &c. tom.* i. *part* 2. *p.* 105. *pl.* 13. *fig.* P. Q. R, 1754.—Geschwantzer-zackiger Wasserfloh, *Schæffer, Die grun. arm. Polyp. &c. tab.* 1. *fig.* 1—8, 1755.—Monoculus Pulex, *Poda, Insect. Mus. Græcens. p.* 124, 1761. *Ledermüller, Mikroskopischen Gemuths-und Augen-ergötzung, p.* 146. *tab.* 75. *fig.* 2, 1763.—Le Perroquet d'eau, *Geoffroi, Hist. Abrég. des Insectes, t.* ii. *p.* 655. *no.* 1, 1764.—Monoculus Pulex, *Muller, Faun. Insect. Fridrichsdalens. p.* 95, 1764.—Branchipus conchiformis primus, *Schæffer, Element. Entom. t.* 29. *fig.* 3, 4, 1766. *Goeze, Naturforscher, part* 7, 1775.—Daphne Pulex, *Muller, Zool. Dan. Prod. p.* 199. *no.* 2400, 1776.—Monoculus Pulex ramosus, *De Geer, Mem. pour serv. &c. t.* vii. *p.* 442. *pl.* 27. *fig.* 1—4, 1778.—Monoculus Pulex, *Blumenbach, Handbuch der Naturgeschichte, p.* 399, 1779. *Eichhorn, Beyträge zur Naturgeschichte, &c. p.* 51. *t.* 5. *fig.* H, 1781.—Daphnia pennata, *Muller, Entomostraca, pl.* 12. *fig.* 4—7, 1785.—Monoculus Pulex, *Manuel, Encyc. Method. Hist. Nat. t.* vii. *p.* 722. *no.* 15. *pl.* 265. *fig.* 1—4, 1792. *Fabricius, Entomol. System, tom.* ii. *p.* 491, 1793. *Latreille, Hist. Nat. gen. et part. des Crust. &c. t.* iv. *p.* 223, 1802. *Encyclopedia Britannica,* art. *Entomology,* 1810.—Daphnia Pulex, *Lamarck, Hist. Nat. des Anim. sans Vertèb. t.* v. *p.* 126. *no.* 1, 1818. *Samouelle's British Insects, p.* 80, 1819.—Monoculus Pulex, *Jurine, Hist. des Monoc. &c. p.* 85. *pl.* 8. *fig.* 1, 2. *pl.* 11. *fig.* 1, 3, 5, 1820.—Daphnia Pulex, *Straus, Mem. du Mus. d'Hist. Nat. tom.* v. *pl.* 29, 1821. *Desmarest, Consid. Gen. sur les Crust. p.* 372. *pl.* 54. *fig.* 3, 4, 1825.

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* This is quoted by Straus as identical with his *D. macrocopus.*

The *Daphnia longispina* of Muller (who quotes Schæffer, pl. ii. fig. 1.) and many other succeeding authors, amongst others Ramdohr, is merely a variety of *D. Pulex*, or rather the same insect in a less advanced stage of growth. The *D. magna* of Straus, pl. xxix. f. 21, 22, is also a mere variety of the *Pulex*, as I have found them both together in considerable numbers, and running into each other.

The shell is quite transparent in general, though sometimes reddish coloured. The extremity of the valves terminates in a long spinous tail. Head large, beak sharp-pointed, rami beautifully plumose. The sixth segment of the body has four projections issuing from it, the first being prolonged and curved upwards. The tail of the shell varies much in length, sometimes being short and blunt, which is the *D. pennata* of Muller, the *D. Pulex* of Straus; at others it is long and pointed, and in this state it is the *D. longispina* of these authors. Jurine has, I think, satisfactorily shown these to be mere varieties, the length of the tail varying according to age. In the young it is always long, and becomes shorter as the insect advances in age. The male is much smaller than the female, and has the antennæ much longer, as already described.

II. *Daphnia vetula* (plate ix. fig. 13.). Valvulis non caudatis, ramis plumosis, segmente sexto corporis non instructo lobulis.

Hab. Ponds and ditches, common.

Synonyms. Ungeschwanzter-zackiger Wasserfloh. *Schæffer, p.* 229. *pl.* 1. *fig.* 9, 1755.—Daphne vetula. *Muller, Zool. Dan. Prod. p.* 199. *no.* 2399, 1776.—*Sulzer, Abgekurzte Geschichte der Insecten, p.* 266. *pl.* 30. *fig.* 10. *e*, 1776.—Mon. exspinosus. *DeGeer, tom.* vii. *p.* 457. *pl.* 27. *fig.* 9—11, 1778.—Daphnia Sima. *Muller, Entomostraca, pl.* 12. *fig.* 11—12, 1785.—Mon. Simus. *Linnæus, Syst. Nat.* 3000. *no.* 25, 1788. —Mon. Simus. *Manuel, Encyc. Méth. t.* vii. *p.* 723. *no.* 18, 1792.— Mon. lævis. *Fabricius, Ent. Syst. t.* ii. *p.* 492, 1793.—Daphnia Sima. *Latreille, Hist. Nat. gen. et part. t.* iv. *p.* 288, 1802.—Daphnia Sima. *Bosc. Hist. Nat. Crust., &c. t.* ii. *p.* 283, 1802.—Mon. Conchaceus. *Donovan's Nat. Hist. of Brit. Ins. vol.* i. *p.* 15. *pl.* 5. *fig.* 1, 1802.— Daphnia Sima. *Ramdohr Beyträge, &c.*, 1805.—D. Sima. *Gruithuisen, Nova Acta Phys. Med. Acad. Cæsar. Natur. Curios. vol.* xiv. *part* 1*st. p.* 399. *pl.* 24. *fig.* 1—6, 1815.—Mon. Sima. *Jurine, p.* 129. *pl.* 12, *fig.* 1—2, 1820.—Daphnia Vetula. *Straus, t.* v. *pl.* 29. *fig.* 25—6, 1821. —Daphnia Sima. *Desmarest, p.* 373, 1825.

In this species the valves of the shell are without the spinous tail of the preceding, being rounded and slightly serrated on the inferior margin. The rami are plumose, but not so decidedly as in the preceding species. The head is obtuse, much smaller than in *Pulex*, and the beak less projecting. The sixth segment of the body has one or two slight projections upon it, but is not provided with the lobules of the *Pulex*. The shell is smooth and transparent. It is smaller than the preceding species.

III. *Daphnia reticulata* (plate ix. fig. 14.). Valvulis rotundatis, reticulatis, brevi-caudatis, capite parvo.

Hab. Ponds and ditches round London, ditch near Surrey Zoological Gardens, &c.

Syn. Daphnia quadrangula. *Muller*, *Entomostraca*, 1785.—Mon. quadrangula. *Linnæus*, *Syst. Nat. no.* 24. 2999, 1788.—Mon. quadrangularis. *Manuel*, *Encyc. Méth. t.* vii. *p.* 723. *no.* 17. *pl.* 265. *fig.* 8, 9. 1792.—Mon. quadrangulus. *Fabricius*, *Ent. Syst. t.* ii. *p.* 492, 1793.—Daphnia quadrangula. *Latreille*, *p.* 227. *t.* iv., 1802.—Daphnia rotunda? *Straus*, *op. cit.*, 1821.—Mon. reticulatus. *Jurine*, *p.* 139. *pl.* 14. *fig.* 3. 4, 1820.—Daphnia reticulata. *Desmarest*, *p.* 374, 1825.

The valves of the shell in this species are nearly rounded, reticulated, provided with a short tail. The head is small and has no beak; the rami are not plumose. The figures of *D. quadrangula*, Muller; *D. rotunda*, Straus; and *Mon. reticulatus*, Jurine, all differ somewhat in appearance; but I have seen this species frequently assume the appearance of Muller's figure as well as that of Straus, and I have no doubt of all these being the same species.

IV. *Daphnia cornuta* (plate ix. fig. 15.). Valvulis convexis, curti-caudatis, capite longe rostrato, ramis curtis.

Hab. New River, London.

Syn. Monoc. cornutus. *Jurine*, *p.* 142. *pl.* 14. *fig.* 8. 9. 10, 1820.—Daphnia cornuta. *Desmarest*, *p.* 375, 1825.

This little species is provided with a very long beak, which is slightly curved. The anterior, inferior angle of the shell is prolonged into a short tail. The rami are very short, scarcely the length of the beak. In many respects it bears a strong resemblance to a *Lynceus*, and seems to be the connecting link between the two genera.